

Chickahominy River and Tributaries - Bacteria TMDL Implementation Plan Development
Government Work Group – Final Meeting Minutes
June 18, 2012
9:00 am – 11:00 am

In Attendance: Mark Alling, DEQ, Megan Sommers-Bascone (DCR), Dr. Ram Gupta (DCR), Mike Dieter (Hanover Co.), Olivia Hall (Henrico Co.), Grace LeRose (City of Richmond), James Beckley (citizen), Jody Bryant (citizen)

Meeting convened at 9:07 am. Margaret began the meeting with a brief overview of the meeting agenda and goals. She also stated that members of the Government Work Group would be evaluating information generated by the other two work groups (residential and agriculture).

Margaret noted that the results from the homework assigned at the first Public Meeting would be assembled into a list that will be given to the Steering Committee and posted on the website. Working group members may continue to submit “constraints/solutions” to the list through the end of the month.

Attendees identified the following constraints:

1. Olivia Hall – It takes a long time to get approval for permits to construct BMPs. She suggested that localities could expedite /streamline permitting so projects do not take years to initiate.
2. Christine Beish (citizen – not attending - via written comments) –
 - a. There is a lack of authority for enforcement because practices in the implementation plan are voluntary. Implementation cannot be ensured. Potential solution: identify ways to make voluntary practices more desirable/digestible.
 - b. Outreach and education is a challenge. There is little or no interest from the general community. Need to find the right vehicle for outreach. Stream walks are a potential tool for outreach.
3. James Beckley –
 - a. Believes we can never have enough data. Money should be allocated for continuous monitoring, not just monitoring after implementation. Citizen monitoring is a great resource to obtain low cost, high quality data. Monitoring in the Reedy Creek watershed was given as an example. Coliscan Easy Gel is a potential low cost monitoring alternative; approximately \$3.00/sample. It is not as accurate as a lab test but can provide a ballpark estimate.
 - b. Monitoring can increase public interest and help make a connection with education. Can also be used to identify “hot spots”.
 - c. Localities and or SWCD may be able to assist with seeking funds to cover associated costs. Can also utilize partnerships with localities to identify existing sewer lines, septic systems, stray animal populations, etc.
 - d. Local governments can encourage public outreach/education curriculum into schools piggybacking on the required “meaningful watershed experience”. Providing

information at public fairs and events could be also help spread awareness of WQ issues.

- e. Funding sources should be identified to cover the remaining funds needed after cost-share is applied to projects. Local governments could apply for grants to help cover the costs.

Mike asked if there are nutrient credits available for farmers. Grace noted that there is no regulatory driver to install these voluntary practices therefore there is not a need for a nutrient credit program.

Ram stated that the national Fish and Wildlife Foundation is a good source of funding to cover costs associated with BMP implementation.

James mentioned that the local proffer fund that had been used for stream restoration would be ending in 2013 due to a bill passed by the General Assembly in 2008. The funds will be managed by the state and allocated on a regional scale. More information on this subject is needed for clarification. Olivia Hall from Henrico said they used to have a program for funding stream restoration and asked if the state could possible lead that. DEQ did not have an answer during the meeting.

Ram asked where citizen-monitoring data could be obtained from DEQ. James noted that this information is available on the DEQ website/online database and is considered public record. Ram also asked about the quality of the citizen monitoring data. James explained that there is a three-tiered system in place; one being the lowest quality data and three being the highest quality. There is no QA/QC conducted at level one. Levels two and three include QA/QC. Level two is used primarily for follow up monitoring and level three uses the exact protocol as DEQ monitoring and is treated the same.

Margaret mentioned that information regarding local pet waste ordinances is important as well as leash laws, etc. Established pet waste stations can be mapped and tracked using GIS. Areas of need can also be identified and ranked to help direct funds.

Funding Sources:

The discussion shifted to potential funding sources. Olivia asked if Bass Pro Shop in Ashland donates funds to environmental activities. Mike noted that the company participated in the Hanover Earth Day event. He also mentioned that pet waste cleanup companies have offered to donate bags if they are given advertising space. Mike also said that Hanover asks companies what they can personally do to reduce stormwater at their sites.

James said that Filterra might be willing to construct promotional installations of their products. Mike has also spoken with Filterra representatives about free design work.

James suggested that a portion of property taxes collected from agricultural producers could be put into a fund to cover cost share funds needed to install BMPs in addition to state cost-share. Margaret liked the idea and noted that if farmers are already paying these funds via taxes then they may be more likely to participate. An analysis could be completed to determine the revenue needed to fund this program without dramatically affecting locality operation.

Mike noted that stormwater programs need to be palatable to local officials.

Megan stated that herd health is often a topic of discussion at implementation meetings to promote the added benefits of water quality BMPs. It is important to help relate how these practices can improve production and overall health. Ram mentioned that DCR and Virginia Tech created a booklet to promote the benefits of agricultural BMPs and that farmers do not need to have personal hardship to realize the benefits of BMP implementation.

Jody suggested that the Virginia Farm Bureau be involved with outreach, education and grant funding. Megan mentioned there is also the Cattlemen's Association who could be involved.

Mike expressed his concern that agricultural practices will not offset needed reductions for urban areas. He is attempting to understand how Hanover County's MS4 permit will be affected, where the bacteria is coming from and what will localities be responsible for due to this TMDL study and implementation plan.

James questioned if building ordinances allow for LID or other BMPs. In 2014 the Bay Act will require that localities allow for these types of practices. These practices are more focused on nutrient reductions however it's possible they could be beneficial to bacteria reductions as well.

James was also concerned about maintenance of BMPs citing an example from his neighborhood of improper upkeep of a BMP. Grace stated that there are constraints with BMPs in private developments. Poor education of landowners is an issue. Localities cannot absorb problems on private lands. There was discussion that in Hanover Co., the locality is tasked to maintain BMPs in agreement with HOAs.

There was a suggestion that localities could adopt stormwater utilities similar to the City of Richmond. A stormwater utility is being considered by Henrico County.

Margaret asked what kind of mechanisms could work to solve the issue with poorly maintained BMPs on private property. Locality representatives stated that if there are no existing maintenance agreements, the localities cannot force the landowner to conduct maintenance. James suggested that the County could provide information and resources to landowners to increase education on this issue. Olivia noted that most localities have a BMP inspection

program. Grace stated that accountability and responsibility for BMPs lies with the person who owns them. Maintenance cannot be forced if there is not a contract/agreement.

Mike gave a local example of how he assisted a group of concerned citizens to get a BMP issue resolved. He also said that ultimately in Hanover Co, homeowners or HOAs own the BMPs.

James suggested that localities send letters to landowners that have existing BMPs on site.

Margaret thanked the group for their comments and reviewed the preliminary estimates for BMPs. She reviewed the tables referencing the subwatershed map. She also described how the modeler runs different scenarios to arrive at the desired outcome of zero percent violation.

James asked why the TMDL is based on a 0% violation rate while the standard for listing impairment is 10.5%. Mark stated that 0% is an EPA required standard. Margaret noted that the 0% is based on a geometric mean of hourly loads generated in the model. There was discussion of the 9 scenarios and Margaret emphasized that the process requires the use of one scenario that will achieve the required 0% standard. For this plan the modeler has suggested using Scenario 8. She also explained that is highly unlikely that every BMP included in the plan would be implemented. The TMDL reductions are conservative (there is an implicit margin of safety). Restoration of the waterbodies are determined by follow-up monitoring – not a direct comparison to the TMDL loads.

There was some discussion of how localities track issues with storm sewer overflows and sewer infrastructure. Olivia mentioned that most localities use cameras to inspect and detect issues such as leaks or breaks in sewer lines.

Margaret reviewed the estimated residential land-based BMPs needed (Table 8) and asked if the estimates were reasonable. She asked for input/conservative cost estimates for cost per unit of overflow correction. After some discussion Margaret asked Ram to submit a comment on the TMDL about changing “developed” to something more clearly to indicate the inclusion of human and pet waste in this category. Olivia noted that the cost of sewer line installation and connection would likely depend on the area of installation. She said that she could provide cost estimates.

Margaret asked the group if they would like to include an analysis of existing infrastructure and identify areas of most need. Chesterfield conducted this analysis for their infrastructure in the Richmond Implementation Plan. This may help to decipher differences among localities. Grace said that she could provide cost per foot to the main connection.

In a follow-up email, Mike provided the following from Hanover:

“For “Sewer Connection Cost” in Hanover County (this appears in both Straight Pipe Corrections and in Failing Septic System Corrections), the Hanover County Connection Cost is currently \$7,838. This does not include the cost to actually do the work, just to hook up to the septic system.

For failing septic system correction, sewer connection Hanover has a recent study estimating costs to connect neighborhoods that currently are on septic to the sewage system. This involves installing sanitary sewer throughout the subdivision and connecting each residence to the system. Estimated average costs are \$24,000/household. Also for this connection cost will be \$7,838. Total per lot will be \$31,838.

We have quite a bit of experience building /rebuilding retention ponds for the original version of Hanover County’s “stormwater program”. Current costs to install a pond including engineering, permitting and construction are \$13,600/ impervious acre treated.”

In a follow-up email, Olivia from Henrico provided the following:

“An estimate of the cost to connect an individual home to the sanitary sewer system was also requested. Assuming that there is available sewer in a street or easement along the property frontage, the cost for a County sewer lateral would be an installation cost of \$3,515 plus a connection fee of \$2,610 for an existing home on septic tank or \$5,220 for a new home. These costs are effective October 1, 2012 in accordance with County Ordinance and may be increased on an annual basis. To summarize the cost for a sewer lateral varies from \$6,125 for an existing home to \$8,735 for a new home. The homeowner will also need to pay for a sewer line to be installed from the property line to the home as well as abandonment of any existing septic system. If a sewer main needs to be extended the budget cost for design and installation of such extension would vary from approximately \$150 per foot of 8” line in a vegetated easement to about \$250 per foot in a paved roadway. This cost assumes that pump stations, force mains and treatment plants needed to serve an area are already in place with no expansion needed. It would be expected that where septic tanks are used, then infrastructure including at least sewer mains in addition to the services would be required making the cost of connecting to public sewer much more expensive than just the cost of the service connection. The actual costs to homeowners would be expected to vary significantly among municipalities.”

In subsequent follow-up emails from Ralph Claytor with Public Utilities at Henrico, the following was provided related to sewer connect of failed/malfunctioning septic systems:

“Following is a description of options to provide public sewer when septic tanks are used. Note that for a homeowner that will reside in a home that the costs for a short sewer extension and connection is less than full cost but this does not provide for significant sewer extensions into areas not currently served. Our programs do not address rural-type areas where public sewer is not readily available and septic service has been chosen to facilitate development.

DPU is not aware of any particular area that is experiencing septic tank problems.

When VDH finds a significant problem with a specific septic tank installation they will typically call to determine if sanitary sewer is available to the site. By County Code, sewer is available if it is within 300 feet of the structure to be served. If sewer is available, the VDH may require the Owner to connect to

County sewer rather than issue a permit to repair or replace the septic. Connection is at the Owner's expense.

County Code requires that sewer service be provided at the Owner's expense. Where the property is an existing single family home where the Owner resides, DPU will provide a short extension at Owner's expense as described below. Where the property is a rental property or a commercial property, the Owner must hire an engineer for design and a contractor at their own full expense. New development also provides extensions and connections at their full expense.

By County Code, DPU will provide a short extension at Owner's expense for a new or existing single family home where the Owner will reside. The maximum length of such extension is typically 1000 feet. By County Code, the cost of such extension is currently \$25 per foot for an existing home plus local facilities fee plus connection fee. The connection fee is ½ of the normal fee for an existing home on a septic tank. The cost of such extension is currently \$50 per foot for a new home plus local facilities fee plus full connection fee. Where several homeowners in a neighborhood desire service, the homeowners may apply for a short extension and share the cost of the extension.

DPU does not require homes where sewer is available to connect to the sewer. DPU is ready to provide service at such time that the Owner desires to connect.

DPU does not have any programs to extend sewer service into areas not currently served by sewer. By County Code, any developer or other owner may apply for sewer service and make sewer extensions and connections at their expense in accordance with the DPU master plan.

Extensions of sewer into those areas not currently served would be provided by development in accordance with the DPU master plan and the developer, in accordance with a sewer service agreement, would donate the collector and trunk sewers to the County DPU for operation and maintenance. Note that the Virginia Code allows development of new subdivisions in these areas to use septic systems and does not require extension of public sewers."

Ram noted that the estimates for retention ponds in Table 7 are too high. Margaret stated that ponds are the last priority for implementation. She also acknowledged that there are many BMPs not yet accounted and some that lack of efficiency rates. For example, street sweeping was included in the James River Implementation Plan. Localities with MS4 permits are likely already implementing this BMP in their programs.

Margaret asked: Where do we start with SSOs? Cost and timeframe? Would we want to propose this?

Margaret asked if this is something that should be addressed locally. She emphasized that the implementation plan is intended to help localities, not hurt them. The implementation plan is purely voluntary and will be used as a baseline to help identify where work needs to be done. For example, how many fixes in infrastructure have been noted (leaks, camera, etc.). Establishing a BMP inventory in the watershed will help us keep track of what has been accomplished post-TMDL and IP.

Mike with Hanover noted that he would have to get this information from the utility department. As a follow-up, in emails after the meeting he provided that:

"Our utilities department reports that overflow incidents are 8-12 incidents/year for the past several years and the cost per incident for typical overflows are around \$2000/incident. A typical incident

would be one where blockage can be cleared without any excavation. Where excavation is involved costs average around \$35,000/incident.”

As a follow-up, in an email after the meeting Olivia with Henrico County provided the following information related to their SSO program:

“For the purpose of sanitary overflow correction and to address elements of CMOM, the County of Henrico Department of Public Utilities (DPU) maintains an Inflow and Infiltration (I&I) program. Development of this program required significant engineering evaluations to complete a Wet Weather Study and a Master Facilities Plan that included implementation of a system sewer model. We also leveraged parallel work programs that developed a county-wide GIS system and a DPU CMMS in the collection, analysis and mapping of the data described in the following paragraph.

The goal of the program is to correct I&I problems, repair damaged sewer lines, and resolve high maintenance problems. The program is designed to reduce infiltration and inflow into the system, prevent sewage overflows, limit the number of sewer main stoppages, minimize O&M costs, and provide safe and continuous service to sewer customers. The need for sewer rehabilitation projects are based on system wide wet weather flow evaluations, customer complaints, the on-going CCTV inspection program, the on-going sewer main cleaning program, and information collected during response to service calls. Methods employed to develop system improvement requirements include cleaning and inspecting sewer pipes to identify defects; pipe line repairs; inspecting manholes; flow isolation and monitoring; smoke testing; dye testing; and CCTV inspection of both existing and new sewer lines. The results of these activities and evaluations along with other data such as pipe age, pipe material, repair history, sewer backup and overflow records, and hydraulic capacity are used to identify and prioritize sewer line rehabilitation and/or replacement requirements. A summary of activities for this program is provided to DEQ on an annual basis. Data for the year ending March 14, 2012 is shown in the following table.

Information from DPU Design for Rehabilitation Projects	
a	9.18 miles of sanitary sewer main rehabilitated by lining of pipe
b	3.20 miles of sanitary sewer main replaced
c	212 sanitary manholes rehabilitated
d	81 sanitary manholes replaced
e	1268 sanitary sewer services replaced
f	24.05 miles of sanitary sewer mains CCTV inspected and cleaned (performed by the engineering services contractor)
g	560 manhole inspections (performed by the engineering services contractor)
h	\$12,670,128.00 spent on sanitary sewer evaluation studies, design and construction costs for sewer rehabilitation projects
Information from DPU Operations	
a	23 miles of sanitary sewer mains CCTV inspected and cleaned (performed by the annual contractor, Video Pipe Services)
b	29 sanitary sewer mains repaired (repairs performed by both DPU Ops and the annual contractor, G.L. Howard)
c	412 sanitary sewer service lines repaired (includes both cleanout installation and service line repair, performed by both DPU Ops and the annual contractor, G.L. Howard)
d	750 manhole inspections (performed by the annual contractor, Video Pipe Services)
e	\$119,363.38 spent on cleaning sanitary sewer mains (amount paid to annual contractor, Video Pipe Services)
f	44 sanitary sewer overflows

“Related specifically to sanitary sewer overflows, one goal of the I&I Program is to incrementally improve the system response to wet weather impacts. By 2036, this program projects that a 10 year recurrence interval storm will be contained within the sanitary sewer without overflow. The DPU Capital Improvement Program identifies projects based on the above stated criteria and projects the budget required to accomplish these goals. Projected budget needs specifically related to sewer rehabilitation and wet weather control requirements over the next 25 years are estimated to range from \$400,000,000 to \$500,000,000. (These costs do not include annual operating budget costs for ongoing maintenance programs.) Note that the availability of funding is subject to annual appropriations by the Board of Supervisors.”

There was some discussion about end of pipe inspections and dry weather monitoring. Olivia and Grace noted that these are already part of programs.

Margaret gave a brief overview of the Middle James Roundtable Pet Waste Social Media Campaign that stemmed from the James River Implementation Plan. The committee has been meeting quarterly to develop a regional campaign. Mike noted that he would welcome other means for increasing information in reporting. The County currently distributes flyers for pet waste as part of their MS4. In a follow-up email, he stated:

“Cost for a mailing which includes printing and mailing costs is around \$0.46/household.”

Margaret briefly reviewed the maps noting potential areas in need of stream fencing. She emphasized that these maps are merely suggestions and will be reviewed during the Agriculture Work Group meeting to refine the estimates. Jody asked if stream fencing was the primary BMP initiated (i.e. – Stream Fencing was put into the model and then it was determined how many other BMPs were needed). Ram and Megan noted that there is a suite of BMPs used for agriculture but stream fencing is the most commonly used because it is very effective at removing a direct source of bacteria. Megan emphasized that Soil and Water Conservation Districts are an invaluable resource for local knowledge of agriculture trends.

Grace asked if the implementation plan could be broken down by jurisdiction similar to the James River Implementation Plan. Margaret will ask the contractor if this is feasible. James suggested we obtain numbers from locality animal control programs to determine where stray animals are an issue.

Margaret thanked everyone for his or her attendance and participation. She mentioned that meeting minutes will be distributed to the group in draft form and she encouraged members to submit edits to improve the notes. She plans to send out a Doodle poll for the next meeting.

Meeting concluded at 11:02 am.